

## Patient Selection for Thallium 201 Myocardial Imaging With Exercise Stress

EVEN WITH TODAY'S sophisticated medical technology, the history and physical examination remain essential in patient management. The selection of patients for thallium 201 myocardial perfusion imaging with exercise stress is a good example of this principle.

The sensitivity of this test for coronary artery disease is approximately 70 percent which is about the same as for electrocardiographic (ECG) exercise stress testing. The specificity, however, is significantly higher (96 percent) as compared with ECG stress testing (87 percent), resulting in fewer false positive results with the radioisotope procedure.

Careful patient selection is necessary in order to obtain maximum benefits from the test results. Such selection involves the clinical estimation of the pretest probability of the patient having coronary artery disease. If this probability is judged to be high, such as in a patient with typical angina pectoris, a positive myocardial perfusion

exercise test contributes little and a negative test may be seriously misleading. In general, the test becomes more valuable in cases where the pretest probability is low, such as in a young asymptomatic person in whom findings on ECG stress testing are positive, or a patient with chest pain quite atypical for coronary artery disease. Atypical chest pain which is highly suspicious for ischemic heart disease has been advocated as another indication for the test, but not all authorities agree, arguing that the probability of coronary artery disease in the face of a negative test is too high to forgo further diagnostic evaluation. The pretest clinical evaluation of a patient, therefore, may help decide (1) whether the test is in fact needed and (2) the predictive value of the test, particularly if findings are negative.

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